EUROPEAN COMMISSION
Information Society and Media Directorate General

Lisbon Strategy and Policies for the Information Society
Lisbon Strategy and i2010

Use of Computers and the Internet in Schools in Europe 2006

Country Brief: Czech Republic

6 / 2006

Key findings

(Almost) all Czech schools are equipped with computers and internet connection. 63% use the internet via a broadband connection. With this figure the Czech Republic ranks at number 22 of the 27 countries participating in the survey. There is a large variation between school types: while only 55% of primary schools have a broadband internet connection, at 77% the penetration is highest among upper secondary schools. Rural areas also lag behind urban ones in terms of broadband access, with 56% of the former connected to the internet via broadband as opposed to 74% of the latter.

48% of Czech schools use computers in classrooms, with little variation across school types. This compares to a European average of 62%. But when considering only the new member states, the figure is down to 30%. With this result, the Czech Republic ranks in the top one third of the new member states but still significantly below the EU25 average. Surprisingly little variation on this indicator can be found in this respect according to the subjects of teaching.

The vast majority of schools use ICT in computer labs (91%). This seems to be the typical location where most pupils are confronted with ICT in schools.

36% of the teachers using computers use them in less than 10% of all lessons. A substantial 18% of Czech teachers (compared to 17% at the EU25 level) state, that they use computers in more than half of their lessons. Teachers in vocational schools use computers in class much more frequently than their colleagues in general education.

22% of teachers in the Czech Republic still do not use computers in class. 44% state a lack of computers in their schools as an important barrier but only 16% express the opinion that teachers lack the necessary skills to utilize computers in their teaching.

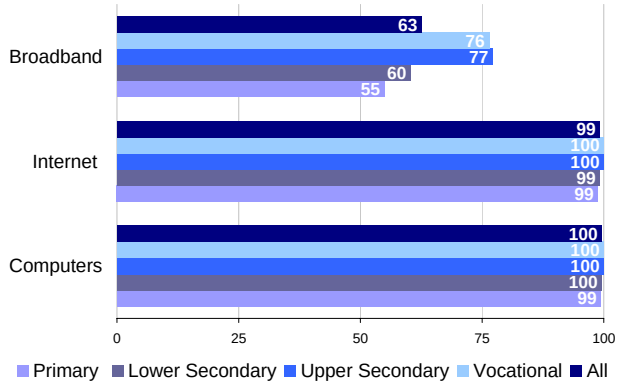
The as yet sub-optimal quality of the internet connection in many schools requires some improvement. Czech schools could probably also benefit from higher levels of integration of ICT in teaching subjects in class as opposed to mostly using ICT only in dedicated computer labs, although the intensity of ICT use in Czech schools is at a level above the European average with hardly any differences according to the age of teachers. Even older teachers belong to the group of ICT users in school. Compared to some other European countries, lack of motivation of teachers in using ICT still does not seem to be the most critical issue for a wider uptake of computers and the internet in schools in the Czech Republic.

ICT Equipment and Internet in Schools

Almost all Czech schools now use computers for teaching and have internet access. 63% use the internet via a broadband connection. With this figure the Czech Republic ranks at number 22 of the 27 countries participating in the survey. There is a large variation between school types: while only 55% of primary schools have a broadband internet connection, the penetration is highest among upper secondary schools, with 77%. There is also some variation with regard to broadband access between urban and rural areas: 74% of schools in densely populated areas have broadband access compared to 56% of schools in thinly populated areas.

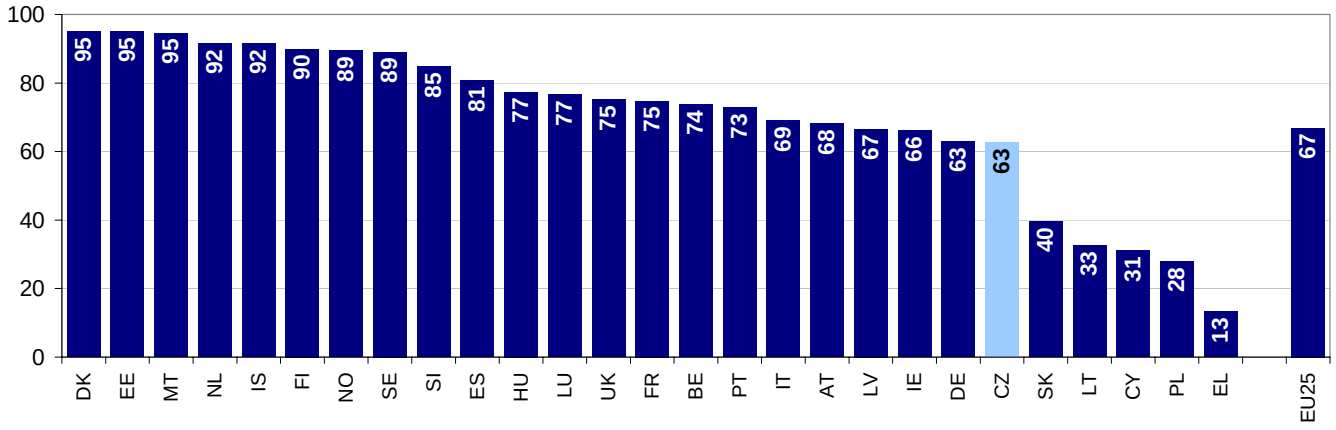
75% of schools have a website, 84% offer e-mail to teachers, and 45% do so to pupils. These figures are significantly above the EU25 average figures.

Percentage of Schools Using Computers, Internet Connection, and Broadband Internet Access According to School Type in the Czech Republic 2006



Source: *LearnInd HTS 2006;* ***Base:*** *All schools;* ***Question:*** *Computers: Q6; Internet, Broadband: Q9. See questionnaire for exact wording.*

Percentage of Schools with Broadband Internet Access in Europe 2006



Source: *LearnInd HTS 2006;* ***Base:*** *All schools;* ***Question:*** *Q9. See questionnaire for exact wording.*

ICT equipment in Czech schools 2006

				Educational Level (CZ)				Type of locality (CZ)			Internet Access (CZ)	
	Total CZ	Total EU25	Total NMS10	Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Inter-mediate	Thinly populated	Narrow-band	Broadband
Computers per 100 pupils [a]	9.3	11.3	7.1	7.6	7.2	10.9	12.1	9.2	8.8	9.7	9.0	9.4
... of which internet connected	8.2	9.9	6.4	6.4	6.2	10.1	11.0	8.0	7.9	8.7	7.8	8.4
Percentage of schools having...												
Computers for teaching [b]	99.6	98.7	96.7	99.4	99.6	100.0	100.0	100.0	98.5	100.0	100.0	100.0
Internet access [c]	99.2	96.2	94.7	98.8	99.2	100.0	100.0	100.0	98.5	99.1	100.0	100.0
Broadband internet access [d]	62.6	66.9	43.4	54.9	60.3	77.2	76.4	73.9	63.0	55.5	0.0	100.0
A website [e]	74.8	63.0	66.7	63.0	78.9	99.4	99.2	91.3	73.3	65.6	66.7	80.5
An e-mail address for the majority of teachers [f]	83.6	65.2	48.1	84.2	81.4	83.3	82.9	86.2	82.2	82.8	85.8	83.4
An e-mail address for the majority of pupils [g]	45.4	23.5	24.4	45.7	44.9	43.8	41.5	42.8	44.4	47.6	48.1	44.4
A LAN [h]	80.6	55.2	60.4	77.9	80.2	85.8	86.2	79.7	85.9	78.0	79.2	82.4
An intranet [i]	38.8	40.8	26.9	34.6	36.0	48.1	48.0	41.3	37.8	37.9	35.0	41.5
An external support or maintenance contract [j]	65.8	47.1	44.3	76.4	72.9	44.4	48.0	61.6	63.7	69.6	76.5	60.4
Percentage of schools using computers for education in…												
Computer labs [k]	90.7	80.5	94.6	86.5	96.7	99.4	100.0	94.2	91.7	88.1	87.4	92.6
Classrooms [l]	47.6	61.4	29.5	48.0	44.7	46.3	42.3	51.4	46.6	45.8	45.9	48.9
School library [m]	19.9	33.4	36.8	11.4	17.5	35.2	35.8	30.4	18.8	14.1	16.4	22.0
Other locations accessible for pupils [n]	23.9	27.0	20.2	18.0	23.6	34.0	35.8	18.1	20.3	29.5	25.1	22.7

Source: *LearnInd HTS 2006;* ***Base:*** *a: all pupils; b-j: all schools, k-n: schools using computers for educational purposes for pupils (cf. index b);* ***Question:*** *a: Q4, Q6, Q7; b: Q6; c: Q9; d: Q9; e-j: Q12; k-n: Q8. See questionnaire for exact wording.*

48% of Czech schools using computers for teaching use them in classrooms, with hardly any variation across school types. Computers in the school library are more or less restricted to upper secondary and vocational schools. The location of highest computer use in schools is the computer lab, with a figure of 91% of all schools stating this to be the case, and all upper secondary and vocational schools do so.

Those schools with a broadband connection to the internet are much more likely to have a more sophisticated ICT infrastructure including a school website, the use of a LAN or the availability of an intranet.

The use of Computers and the Internet in Schools

Computers are used for various purposes and as part of teaching different subjects in schools but also and very widely as a separate subject.

Computer sciences are taught as a separate subject in 81% of Czech schools and mainly in both lower and upper secondary schools (92% and 96%) and in almost all of vocational schools according to the statements made by the Czech head teachers.

78% of the Czech classroom teachers had used computers in class in the 12 months prior to the survey, with some variation across school types – ranging from 82% in primary schools to 70% in upper secondary schools – and some variation between urban and rural areas with the urban regions surprisingly at a few percentages lower level. For most teachers, this includes not only using a computer for presentation purposes but also the use of computers by pupils in class.

34% of teachers using computers use them in less than 10% of all lessons. A substantial 18% of teachers state that they use computers in more than half of their lessons. Teachers in vocational schools use computers in class much more frequently than their colleagues in general education with almost 60% using computers in more than a quarter of their lessons.

Use of computers in class in the Czech Republic 2006

Assessments of the head teacher		Total CZ	Total EU25	Total NMS10	Educational Level (CZ)				Type of locality (CZ)			Internet Access (CZ)	
					Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Inter-mediate	Thinly populated	Narrow-band	Broadband
Computer sciences taught as separate subject	Agree	80.1	54.7	91.2	71.5	91.5	96.3	96.7	90.6	78.9	74.4	74.3	83.7
	Disagree	19.3	43.7	8.4	27.6	8.1	3.7	3.3	9.4	20.3	24.7	25.1	15.7
	Don't know	0.6	1.6	0.4	0.9	0.4	0.0	0.0	0.0	0.8	0.9	0.5	0.6
Computers and the internet are													
integrated into teaching of most subjects	Agree	67.3	75.3	73.1	70.6	66.3	59.3	61.0	63.0	69.9	68.3	68.9	66.8
	Disagree	31.7	24.1	26.4	28.5	32.5	39.5	37.4	35.5	30.1	30.4	29.5	32.6
	Don't know	1.0	0.6	0.4	0.9	1.2	1.2	1.6	1.4	0.0	1.3	1.6	0.6
used for teaching traditional subjects or basic skills	Agree	55.4	75.8	72.3	64.9	55.7	36.4	35.8	55.1	59.4	53.3	58.5	53.7
	Disagree	40.4	22.8	26.0	34.2	42.3	52.5	55.3	41.3	34.6	43.2	38.8	41.2
	Don't know	4.2	1.4	1.7	0.9	2.0	11.1	8.9	3.6	6.0	3.5	2.7	5.1
used for teaching foreign languages	Agree	80.7	56.6	71.1	82.6	81.7	74.7	74.0	79.7	80.5	81.5	85.2	78.3
	Disagree	17.9	40.1	28.0	15.3	15.9	25.3	26.0	20.3	17.3	16.7	13.1	20.4
	Don't know	1.4	3.3	0.8	2.1	2.4	0.0	0.0	0.0	2.3	1.8	1.6	1.3
used for coping with students with special needs/ handicaps	Agree	72.5	71.7	58.3	81.1	80.9	56.2	55.3	72.5	70.7	73.6	74.9	71.2
	Disagree	21.3	23.7	31.6	16.8	17.1	29.0	31.7	21.7	22.6	20.3	19.7	22.4
	Don't know	6.2	4.6	10.1	2.1	2.0	14.8	13.0	5.8	6.8	6.2	5.5	6.4

Source: *LearnInd HTS 2006;* ***Base:*** *All schools using computers for educational purposes for pupils;* ***Question:*** *Q13: "To what extent do you agree or disagree with the following statements regarding the educational use of computers and/or the internet in your school?"*

Czech teachers using computers do not restrict themselves to a particular source of information but use a multitude of different material from a variety of sources for teaching purposes which in most categories is above or around the European average.

The learning material that is used most by Czech teachers includes offline learning materials such as CD-ROMs (87%) and material that has been collected by the teacher on the internet (81%).

Only a few (40%) of teachers use prefabricated pedagogical material from existing established online sources.

Interestingly, there is no clear difference in the frequency and intensity of use of ICT in class according to the age of the teachers. It is not the case – as in many other countries that – that the older the teachers (indicator used here: years of teaching experience), the less use they make of computers and the internet in schools.

However, the higher the school level, the more use of computers – especially in terms of frequency and intensity – is made by teachers and pupils. Almost 60% of the teachers using computers in class in upper secondary and vocational schools use these in more than 25% of their lessons, whereas the figure reaches 40% in primary and 36% in lower secondary schools. There are little differences according to age of teachers. The overall pattern is rather similar across all groups.

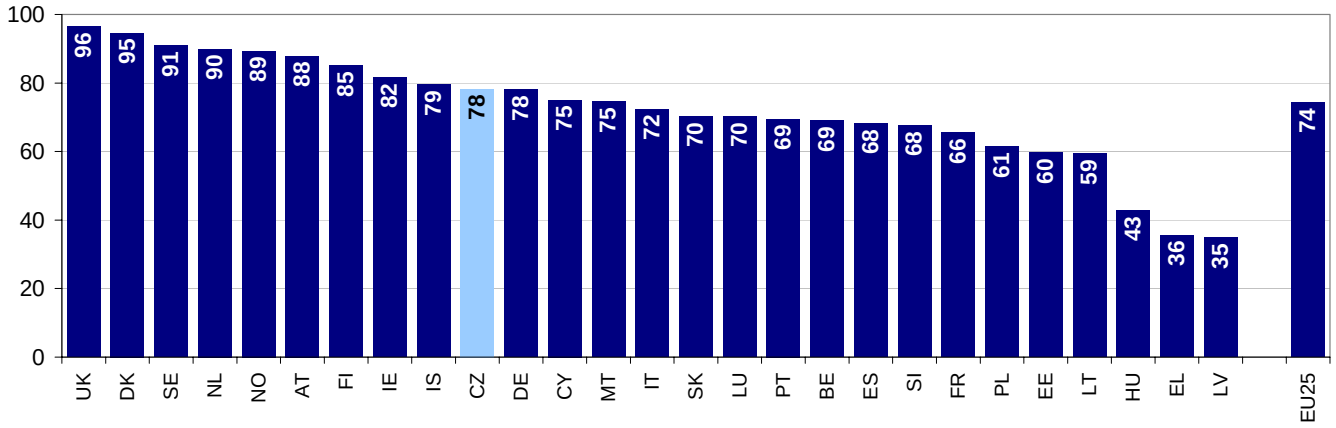
22% of teachers in the Czech Republic still do not use computers in class. When asked for the most important barrier, two issues gain the highest ratings among this group of teachers: 44% state a lack of computers in their schools as an important barrier; 37% argue that their subject does not lend itself to being taught via computers.

5% of all teachers and a quarter of those not using ICT are still not convinced of any benefits of using computers in class; only 16% express the opinion that teachers lack the necessary skills to utilize computers in their teaching. This results in a situation where the statement “lack of equipment in school” is expressed by a substantial 10% of all Czech teachers (22% non-users multiplied with 44% of teachers agreeing to this item).

The differences with the European average are not very striking probably with the exception that more Czech teachers (37% compared to a EU25 average of 24%) do not believe much in the benefits of ICT use in class.

Virtually all schools in the Czech Republic are equipped with at least some computers, but there seems to be some scope for further ICT-infrastructure improvements at Czech schools such as an increase of the number of computers in total and per pupil where the Czech Republic ranks below the European average (9% compared to 11%).

Percentage of teachers who have used computers in class in the last 12 months (2006)



Source: *LearnInd CTS 2006;* ***Base:*** *All teachers;* ***Question:*** *Q7. See questionnaire for exact wording*

Teachers' use of computers in class in the Czech Republic 2006

Percentage of teachers who …	Total CZ	Total EU25	Total NMS10	Educational Level (CZ)				Type of locality (CZ)			Years of teaching experience (CZ)			
				Primary	Lower secon-dary	Upper secon-dary	Voca-tional	Densely popu-lated	Inter-mediate	Thinly popu-lated	<5 y	5-9 y	10-19 y	20+ y
...have used computers in class[1]	78.3	74.3	61.3	82.4	78.9	69.5	71.0	72.5	82.2	79.5	75.4	80.1	78.7	78.1
…use a computer in class to present or demonstrate	71.1	63.4	55.5	72.8	70.7	67.6	69.8	68.1	74.4	70.9	69.5	75.5	72.1	69.2
…have pupils use a computer in class	74.4	66.3	53.8	80.9	76.4	60.4	60.9	67.0	79.3	76.0	72.9	74.2	74.6	74.8

Source: *LearnInd CTS 2006;* ***Base:*** *All teachers;* ***Question:*** *Q7 "How have you used computers and/or the internet for work in the last 12 months?"*

Frequency of computers use in class in the Czech Republic 2006

Percentage of all teachers *using computers in class* who …	Total CZ	Total EU25	Total NMS10	Educational Level (CZ)				Type of locality (CZ)			Years of teaching experience (CZ)			
				Primary	Lower secon-dary	Upper secon-dary	Voca-tional	Densely popu-lated	Inter-mediate	Thinly popu-lated	<5 y	5-9 y	10-19 y	20+ y
…use computers in 5% and less of all lessons	15.8	18.5	15.0	16.1	19.2	15.4	13.1	15.7	16.3	15.6	16.1	15.7	15.3	16.2
in 6 to 10% of lessons	17.5	22.5	17.7	19.4	19.9	13.1	12.5	18.7	13.6	19.3	13.8	17.4	16.5	19.3
in 11 to 24% of lessons	22.8	22.2	22.1	25.4	24.6	15.8	15.9	17.7	24.9	24.3	14.9	27.3	21.4	24.3
in 25 to 50% of lessons	25.9	20.2	24.0	28.3	23.4	19.5	19.9	24.7	26.2	26.3	29.9	27.3	23.8	25.9
more than 50% of lessons	18.0	16.5	21.3	10.9	12.9	36.2	38.6	23.2	19.0	14.5	25.3	12.4	23.0	14.3

Source: *LearnInd CTS 2006;* ***Base:*** *Teachers using computers in class, "don't know" answers excluded;* ***Question:*** *Q9 "For what percentage of time have you used computers and/or the internet in class when teaching your main subject(s) in the past 12 months?"*

Source of educational material used in class in the Czech Republic 2006

Percentage of all teachers *using computers in class*[2] who …	Total CZ	Total EU25	Total NMS10	Educational Level				Type of locality		
				Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Inter-mediate	Thinly populated
…use material they have searched the internet for	80.5	82.7	81.8	77.2	80.7	88.7	87.5	83.5	79.7	79.2
…use existing online material from established educational sources	39.5	74.2	61.8	37.5	44.6	44.3	45.5	41.5	36.5	40.2
…use material that is available on the school's computer network or database	79.9	63.1	52.7	82.8	83.2	72.9	72.7	80.5	80.2	79.5
…use electronic offline material (such as CD ROMS)	86.6	83.0	82.2	86.0	84.9	87.8	86.9	82.5	88.3	87.8
…use other learning material when using computers in class	8.6	8.8	10.8	7.5	9.4	11.3	11.9	11.5	8.1	7.2

Source: *LearnInd CTS 2006;* ***Base:*** *Teachers using computers in class;* ***Question:*** *Q10 "Which of the following types of materials have you used when teaching your main subject(s) with the aid of a computer and/or the internet?"*

Barriers to computer use in class in the Czech Republic 2006

Percentage of all teachers ***not*** *using computers in class*	Total CZ	Total EU25	Total NMS10	Educational Level				Type of locality		
				Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Inter-mediate	Thinly populated
Lack of computers	44.2	48.8	49.0	40.3	44.4	49.5	45.8	40.8	*52.1**	43.0
Lack of adequate content/material	26.7	20.3	16.5	21.8	25.0	34.0	36.1	31.6	*25.0**	23.7
Lack of content in national language	11.1	8.6	5.7	8.4	10.2	15.5	12.5	11.8	*12.5**	9.7
Lack of adequate skills of teachers	16.1	22.5	9.8	16.0	16.7	16.5	16.7	14.5	*14.6**	18.3
No or unclear benefits	25.3	16.2	6.8	23.5	26.9	28.9	26.4	31.6	*16.7**	24.7
Lack of interest of teachers	9.7	8.9	3.3	11.8	13.9	7.2	5.6	9.2	*8.3**	10.8
Subject does not lend itself to being taught via computers	36.9	24.4	25.0	32.8	33.3	41.2	41.7	43.4	*33.3**	33.3
Other	15.2	21.3	20.3	18.5	13.9	11.3	12.5	13.2	*16.7**	16.1

Source: *LearnInd CTS 2006;* ***Base:*** *all teachers not using computers in class;* ***Question:*** *Q12: "Why do you not use computers and/or the internet when teaching in class?"*

Attitudes on the Usefulness of ICT use in Teaching

Computers and the internet have arrived in Czech schools and their use is steadily improving. The share of teachers in the Czech Republic – but also in the European Union in general – who believe that computers and the internet should not be used at all in schools, is at 0%. Czech teachers are positive about the different applications of ICT in teaching and achieve high figures (above the European average) on attitudes that ICT should be used for letting pupils do exercises and practice (93%), letting pupils retrieve information in a self-directed manner (93%) and for collaborative and productive work by pupils (87%). There are only very small differences across school types. The majority of Czech teachers (68%) still believe that teaching about office tools should be an integral part of the teaching process. With this figure, the country ranks above the EU25 average figure. This attitude is most prominent among teachers in vocational schools (77%) and least prominent in primary schools (65%). It is interesting that there is no common pattern across the European countries. In some countries (e.g. the UK, Norway, Iceland, Cyprus but also Spain) teachers in primary schools express this opinion much more strongly and to a larger extent compared to higher-level schools.

Attitudes on the Usefulness of ICT use in Teaching in the Czech Republic 2006

Percentage of teachers saying computers/internet should be used for …	Total CZ	Total EU25	Total NMS10	Educational Level				Type of locality		
				Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Inter-mediate	Thinly populated
Letting pupils do exercises and practise	92.9	79.9	78.8	93.6	92.6	91.8	92.3	90.6	96.7	92.1
Letting pupils retrieve information in a self-directed manner	92.5	85.0	87.8	92.3	94.1	92.8	91.1	94.6	90.0	92.7
Teaching about office tools	68.5	61.3	51.0	65.1	69.3	74.8	77.4	68.5	64.4	70.9
Collaborative and productive work by pupils	86.6	80.5	67.2	88.3	88.9	83.0	83.1	86.6	83.3	88.5
Computer/internet should not be used for any of these in teaching	0.0	0.6	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source: *LearnInd CTS 2006;* ***Base:*** *all teachers;* ***Question:*** *Q13: "What do you think for what computers and the internet should be used for in teaching?"*

Access, Competence and Motivation for Using ICT and the Internet in Schools

Access

The majority of Czech teachers are more or less satisfied with the technical access means at their schools: 73% state that their school is well equipped with computers and 72% express the opinion that their internet connection is fast enough. However, 53% wish there were better support and maintenance actions taken. In terms of content 35% state problems with respect to finding adequate learning materials and 33% argue that existing materials are of poor quality.

Competence in using ICT

Czech teachers feel most competent at using e-mail and using a text processor programme but are less confident with downloading and installing software and with using presentation software packages.

There are hardly any differences in the ICT competence according to school types, with around a third of the teachers in all school types agreeing to the statement that teachers lack sufficient computer skills.

Motivation for ICT use in Schools

80% of Czech teachers see significant learning benefits for pupils using computers in class and state that pupils are more motivated and attentive when computers and the internet are used in class.

Teachers' access, competence and motivation for using ICT in class 2006

Percentage of teachers agreeing or strongly agreeing:	Total CZ	Total EU25	Total NMS10	Educational Level				Subject of teaching					
				Primary	Lower secondary	Upper secondary	Vocational	General primary	Literature and languages	Humanities and social sciences	Science, maths, computer sciences	Physical, artistical, crafts education	Vocational education
Access													
Our school is well equipped with computers [a]	73.4	74.2	76.5	71.8	69.9	76.6	77.3	81.3	70.2	70.6	72.4	71.6	75.5
The internet connection we have is sufficiently fast [b]	71.6	77.2	78.2	67.7	70.6	79.9	79.7	69.7	68.1	75.5	69.7	70.9	79.6
Better technical maintenance and support is required in our school [c]	52.5	64.8	64.6	53.5	54.5	51.0	51.4	49.2	53.9	55.1	49.5	58.6	57.0
Existing teaching materials on the Internet are of poor quality [d]	33.3	29.9	29.3	28.6	29.4	43.3	45.5	27.3	27.9	43.0	35.2	25.5	39.0
It is hard to find adequate learning materials for teaching [e]	35.4	38.7	30.5	31.8	34.2	43.0	44.9	28.2	31.9	28.9	35.8	33.5	50.0
Motivation													
Pupils are more motivated and attentive when computers and the internet are used in class [f]	80.1	86.3	90.1	85.3	81.6	68.4	69.2	90.9	82.0	80.9	80.9	81.9	66.3
Using computers in class does not have significant learning benefits for pupils [g]	13.4	20.7	9.5	12.2	14.1	15.5	15.6	11.6	11.9	12.7	12.0	16.7	16.0
Competence													
Teachers in our school do not have sufficient computer skills [h]	32.0	42.0	30.6	31.2	33.6	32.9	34.4	24.6	35.6	31.6	34.3	28.9	32.3
Competence / computer skills (Percentage of teachers who feel very confident at…)													
Using text processors [i]	62.1	65.0	63.2	58.2	60.6	71.5	74.4	50.7	58.5	58.4	66.1	55.9	69.8
Creating electronic presentations [j]	28.2	34.0	41.0	22.2	27.7	43.4	44.3	12.1	14.4	24.8	36.9	26.0	36.5
Using e-mail [k]	73.1	65.9	64.8	70.1	74.3	80.5	79.5	64.3	70.0	73.6	76.4	71.7	73.0
Downloading and installing software [l]	26.2	35.8	34.6	21.1	24.3	38.5	38.1	16.4	15.9	20.8	33.6	20.5	28.6

Source: *LearnInd CTS 2006;* ***Base:*** *a-h All teachers; i -l Teachers using computers in class* ***Question:*** *a-h Q14, i-l Q11*

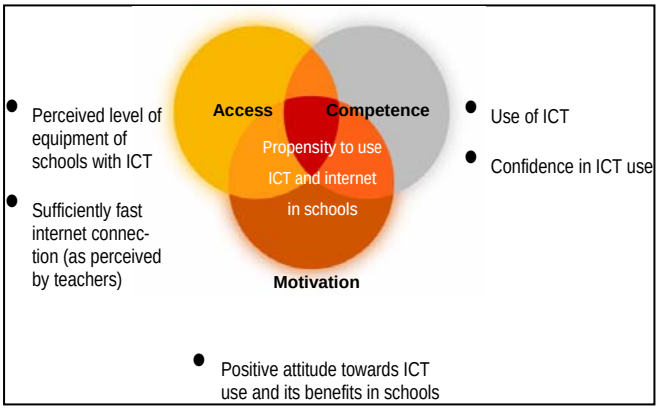
ICT Readiness of Teachers – the ACM Model

The ACM model as developed by Viherä and Nurmela (2001)[3] was applied in LearnInd to generate a typology according to the "propensity to the use of computers and internet by teachers in classroom situations at schools".

The typology in the figure below takes account of the three main categories of preconditions which need to be given for a school to make use of computers and the internet in the teaching process in classrooms, computer labs etc.

These are: access (to computers and the internet at school), competence (in using the computer software and the internet, and applying it for teaching purposes), and motivation (gauged through the attitude that using computers in classrooms results in significant learning benefits).

The Access-Competence-Motivation Model



Any attempt to group the classroom teachers according to their propensity to becoming users of computers and the internet in their teaching processes needs to take account of these three dimensions. In the present application of the ACM model data from the Classroom Teacher Survey (CTS) was used. Therefore "access" for instance is to be understood as a perceived level of computer equipment at schools and teachers' satisfaction therewith rather than an objective measure of equipment status.

38% of European teachers dispose of sufficient access to the internet at school, the necessary competence in using ICT in class and are motivated to its use. With 35% of the teachers belonging to this group, the Czech Republic ranks in 10th which places the country in the top half of European countries. Overall the UK with 60% ranks top and Latvia with 15% finds itself at the very end.

The as yet insufficient internet connection in many schools and a lack of motivation of teachers for using ICT are the most critical issues for a wider uptake of computers and the internet in schools in Europe. 20% of European teachers indicate insufficient computer equipment and the low speed of internet connection at their school as key barriers. 14% show a lack of motivation, i.e., they are of the opinion that using computers in class does not result in significant learning benefits.

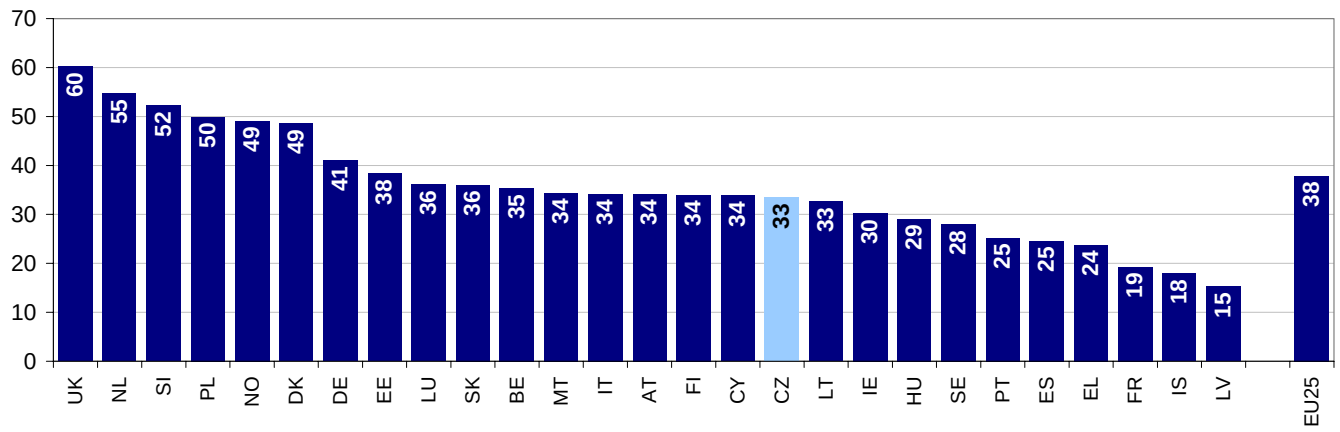
The situation in the Czech Republic is similar to the overall situation in the EU25 with figures close to the European ones but are higher (27% compared to 21%) on lack of or insufficient equipment of ICT in schools.

Access, Motivation and Competence of Teachers for Using ICT in Schools in the Czech Republic 2006

CZ	EU25	Access	Competence	Motivation
2.7	4.3	~~Access~~	~~Competence~~	~~Motivation~~
2.6	3.9	**Access**	~~Competence~~	~~Motivation~~
11.0	9.7	~~Access~~	**Competence**	~~Motivation~~
3.9	5.0	~~Access~~	~~Competence~~	**Motivation**
14.3	13.7	**Access**	**Competence**	~~Motivation~~
5.2	4.8	**Access**	~~Competence~~	**Motivation**
26.9	20.7	~~Access~~	**Competence**	**Motivation**
33.4	37.9	**Access**	**Competence**	**Motivation**
100	100			

Percentage of teachers. ***Source:*** *LeanInd CTS 2006;* ***Base:*** *All teachers;* ***Question:*** *See endnote* [4]

ICT Readiness of Teachers in the Czech Republic: Percentage of Teachers Fully Ready to use Computers in Class (ACM Indicator) 2006



Source: *LeanInd CTS 2006;* ***Base:*** *All teachers.* ***Question:*** *See endnote 5*

ANNEXES

Methodology Report

Universe / Sample population

In order to assure the comparability of school levels in all countries UIS-OECD-EUROSTAT "Mapping of national education programmes to ISCED 97 for school academic/year 2002/2003" [5] was used for composing the sample frame. Based on this, each country divided its school system into ICSED codes and made different combinations that existed in its country.

Sampling frame and method

The sample was composed using official databases, which contained contact data of schools. In the majority of countries the sample was drawn from a database received from the Ministry of Education.

For each country a separate template of sample frames was composed by TNS Emor. These templates contained data about school types across regions as well as location type. School types were defined based on the ISCED codes provided in UIS-OECD-EUROSTAT. Location type distribution was made according to the Eurostat type of locality classification which differentiates densely populated, intermediate and thinly populated municipalities[6]. Apart from that, each country was divided into 3-7 regions depending on the size of a country.

Based on the data provided by countries, TNS Emor composed quotas for each country. Two level stratification was used – quotas for first stage, random sample for second. The quotation for region by school type and location type was endorsed. Simple random selection was conducted by the local agency or the local source of the contact base. Both private and public schools were included in the sample. It was also obligatory to include schools of other teaching languages than the official language of a country in the sample.

Simple random sampling was used inside a quota cell. This means that if the quota for primary schools in region1 was 100 and the total number of primary school in this region was 800, then a random sample selection was be made among those 800 schools. This covered also both private and public schools and schools of other teaching languages than the official language of a country.

No more than 50% of interviews could be made in one school level. At least 10% of respondents had to be from schools which provided professional/vocational or combined programme of vocational and upper secondary level education (in case a country did not have special quota for those schools). It did not matter whether vocational education level was coded as ISCED 3 or ISCED 4.

There were no duplications in samples of head teacher and classroom teacher surveys. This was only allowed in countries with small universe sizes (e.g. Malta, Cyprus, Iceland, Estonia, Latvia etc) and in cases where the last quota cells were very difficult to achieve or there were not enough schools of a certain type. The priority was to include as many different schools as possible. In both surveys, 5 attempts were made before giving up and only if the respondent refused was this person not contacted again.

The CATI programme generated a randomly chosen letter. The interviewer asked for the person with a surname that started on the generated letter. If there was more than one teacher whose surname started with the selected letter, the person that was first alphabetically was chosen. If the correct person was not available, an appointment was made. At least 5 attempts were made before taking another teacher.

Only in Malta, due to instructions dictated by the Education Department, would the Head Teacher randomly select a teacher who would be available for an appointment during which they would be interviewed.

Number of interviews conducted (HTS / CTS)

Country		Head Teachers	Classroom teachers
BE	Belgium	450	807
CZ	Czech Republic	500	1000
DK	Denmark	315	848
DE	Germany	450	901
EE	Estonia	400	851
EL	Greece	500	1000
ES	Spain	518	1022
FR	France	501	869
IE	Ireland	403	626
IT	Italy	500	900
CY	Cyprus	150	600
LV	Latvia	451	902
LT	Lithuania	457	908
LU	Luxemburg	82	277
HU	Hungary	500	1000
MT	Malta	100	200
NL	Netherlands	515	890
AT	Austria	320	450
PL	Poland	500	1000
PT	Portugal	450	900
SI	Slovenia	253	460
SK	Slovakia	502	1000
FI	Finland	318	601
SE	Sweden	200	450
UK	United Kingdom	450	905
IS	Iceland	177	424
NO	Norway	494	708
TOTAL		**10456**	**20499**

Fieldwork

Fieldwork was coordinated by the TNS Emor and conducted in cooperation with its local TNS offices excluding Iceland, Cyprus, Austria, Slovenia and Malta where TNS does not have offices. In these countries partners with whom TNS had previous experience were used.

Pilot interviews prior to the regular fieldwork were conducted with 20 schools in both target groups in Estonia and Greece in February 2006, in order to test the questionnaire (structure, comprehensibility of questions).

Between March and April 2006, surveys among head teachers (head teacher survey - HTS) and classroom teachers (CTS) were carried out in 27 European countries of Europe. TNS Emor was responsible for the fieldwork.

Weighting schemes

After the fieldwork, weighting coefficients were computed using region, location type and school type.

Statistical accuracy of the survey: confidence intervals

Statistics vary in their accuracy, depending on the kind of data and sources. A "confidence interval" is a measure that helps to assess the accuracy that can be expected from data. The confidence interval is the estimated range of values on a certain level of probability of error. Confidence intervals for estimates of a population fraction (percentages) depend on the sample size, the probability of error, and the survey result (value of the percentage) itself. Further to this, variance of the weighting factors has negative effects on confidence intervals.

The calculation of confidence intervals is based on the assumption of (quasi-) infinite population universes. In practice, however, in some countries and for some school levels the complete population of schools consists of only several hundred or even a few dozen of schools. In some cases, literally each and every school within a country-school type cell was contacted and asked to participate in the survey. This means that it is practically impossible to achieve a higher confidence interval through representative school surveys in which participation is not obligatory.

Country Background Data

The Czech Republic is a mid-sized European country with the lowest fertility rate in Europe. The shrinking number of young citizens aged below 14 leaves it at the tail end of the EU Member States. Nonetheless, it has a towering pupil/teacher ratio. Although little money is spent on education in general as a percentage of GDP, the Czech Republic scores high on expenditure in secondary education.

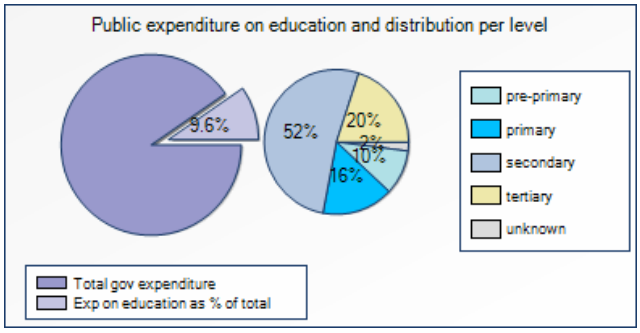
General Population Data for the Czech Republic 2002/03[7]

Total population (000)	10,246
Annual population growth rate (%)*	-0.2
Population 0-14 years (%)	16
Rural population (%)*	25
Total fertility rate (births per woman) *	1.2
Infant mortality rate (0/00) *	4
Life expectancy at birth (years) *	75
GDP per capita (PPP) US$ *	15,615
GDP growth rate (%)*	1.5
* World Bank World Development Indicators	

Resources for Education in the Czech Republic 2002/03

Pupil / teacher ratio (primary)	17
Public expenditure on education :	
as % of GDP	4.4
as % of total government expenditure	9.6
Distribution of public expenditure per level (%):	
pre-primary	10
Primary	16
secondary	52
tertiary	20
unknown	2

Resources for Education in the Czech Republic 2002/03



The Educational System in the Czech Republic [8]

In 2003, the number of people aged 29 or younger was 3,866,791 (37.8% of the population). The number of children of compulsory school age was 1,009,311 (9.8% of the population). The official language of instruction is Czech. In 2004/05 there were a number of schools teaching in Polish: 21 nursery schools 23 basic schools and one Polish *gymnázium*; one *gymnázium* is trilingual Czech-Polish-English and 3 upper secondary technical schools are bilingual (Czech-Polish).

In 2004/05, most pupils in primary and secondary education attend public-sector schools. Since 1st January 2005 the Czech education system works on the basis of new acts that regulate education from pre-primary to upper secondary and tertiary professional schools, its public administration and teacher profession. Individual measures come in force subsequently. The higher Education Act from 1999 regulates higher education. Schools are administered in the frame of general administration. It is distributed between the central government, regions (of which there are 14) and communities. Regions are provided by high degree of autonomy. The Ministry of Education, Youth and Sports preserves the integrated state educational policy by formulating long-term strategies of education and development of the education system, which it submits to the government every year.

The Ministry of Education, Youth and Sports above all:

• executes state administration of the school system;
• is responsible for the conception, state and development of the education system;
• determines the content of education: develops the National Education Programme as a political document discussed by the Government and approved by the Parliament; approves framework educational programmes which are the basis of the development of school educational programmes; accredits educational programmes for tertiary professional schools and for higher education institutions;
• is responsible for teachers' salaries and teaching aids;
• is in charge of the school register (with the exception of nursery schools);
• is an organising body of institutions for in-service training of teachers and detention homes for young people.

Regions are responsible for education on its territory. Regional authorities formulate long-term strategies for their territory every year, in compliance with national objectives. Regions are organising bodies for upper secondary and tertiary professional schools. The communities are responsible for compulsory schooling. They establish and administer nursery and basic schools. The community usually fulfils this task via the Education Commission. Organising bodies appoint school heads on the basis of a tender; they can be dismissed only for reasons defined by law. All schools have the status of legal entities since 1st January 2003. School heads were given full responsibility for the quality of educational process, for financial management of the school, for appointing and dismissing teachers and for relations with the community and the public. By law, the school organising body must establish School Councils (*školská rada*) enabling parents, pupils, staff (not the school head), and the public to participate in the administration of the school. The funding of schools is realized from two sources: capital and running costs are funded by the organising bodies (regions and communities from regional budgets); salaries and teaching aids are allocated from the state (central) budget by the Ministry of Education, Youth and Sports via regional administration. The funding is based on the per capita principle.

Private schools have been established since 1990 (at university level, since 1999). Schools are mostly non-confessional; the usual legal form is a for-profit or non-profit-grant-aided organization. Both private and denominational schools represent 1.4% of the total number of basic schools and 0.8% of their pupils; for upper secondary schools it is 22.5% of schools and 15% of pupils; for higher professional schools it is 33% of institutions and 34% of students; for universities it is 60% of institutions and 6.1% of students in 2004/05. The funding of private schools is based on the same formula for funding of running cost, as are public schools in the respective region. Basic subsidies (50–80% of the amount of similar public institutions, according to the type) can be raised to 80-100% if the school meets a set of criteria. Denominational schools receive the same funding as public schools directly from the ministry.

Private higher education institutions must be non-profit-making to be given a state grant. The Czech School Inspectorate (*Česká školní inspekce*) is a central control body under the direct supervision of the Ministry. It is responsible for monitoring schools and school facilities: their education conditions and results, the quality of management, the efficiency of using funds and complying with binding regulations, at all levels except for higher education institutions.

The use of ICT in Education[9]

The need to provide support for the training of teachers for their new role in a knowledge society has been acknowledged. Through the support for continuing training of pedagogical staff the implementation of lifelong learning is aimed at other key issues identified such as curricular reform and more extensive school autonomy.

The law on pedagogical staff (no. 563/2004) and changes to pay regulations are seen as important motivation instruments in this respect. The career system which is being introduced is based on a greater differentiation of the work of teachers and it supports continuous qualification enhancement. Moreover, changes to the initial training of teachers are being prepared in co-operation with HE institutions. The training of teachers in ICT skills is also important. IT is supported via the State ICT Policy in Education scheme and via the Czech Republic's involvement in the eLearning Programme.

The Study

There is a lack of information on the actual use of ICT for learning in schools, and for supporting political action in potential future programmes. It is necessary to clarify matters such as the educational vision of heads of schools, the current impact of ICTs on teachers' practice, support and training and on other factors for success in e-learning.

The objective of the study is to obtain estimates for the eEurope 2005 indicator on e-learning "number of pupils per computer with Internet connection (broadband/non-broadband)" and relate it to other possible indicators of educational use of ICT in compulsory education (e-learning in schools). The study looks at how Information and Communication Technologies (ICT) are used in schools.

The study is a continuation of the earlier benchmarking exercise for eEurope 2002.

It involved two surveys. Firstly of head teachers to obtain information on the schools and then of teachers to focus on their use of ICTs in the teaching process

This exercise is part of the Information Society monitoring and benchmarking process for which the Commission in cooperation with the Council defined benchmarking indicators.

Country Briefs

This document has been prepared by **empirica** based on own desk research and the above mentioned primary data sources: Head Teacher Survey (HTS) 2006 and Classroom Teacher Survey (CTS) 2006 in the EU25 member states, Iceland and Norway. .

Altogether 27 LearnInd Country Briefs are available in a common format, one for each member of the enlarged European Union, Norway and Iceland.

A final report has also been developed. It includes approximately 100 exhibits, more than 250 data tables and a report about the key results.

You can access and download these documents in PDF format (for free) from http://ec.europa.eu/information_society/eeurope/i2010/benchmarking/index_en.htm.

More information

Check our results and achievements on: http://ec.europa.eu/information_society/eeurope/i2010/benchmarking/index_en.htm. If you wish to be provided with more details, or to receive news and updates, please contact us at: **learnind@empirica.com** or get in touch with us.

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1 Note that "in class" means during lessons while teaching and does not denote a particular location such as a classroom.

2 Base (100%) = all teachers who have used a computer in class in the last 12 months.

3 Viherä, M-L, Nurmela, J (2001) "Communication Capability Is an Intrinsic Determinant for Information Age", in Futures, Volume 33, Issue 3-4:245-265.

4 Synthetic indicators: Access: Q14 (2) "Our school is well equipped with computers" and Q14 (3) "The internet connection we have is sufficiently fast ".

Competence: Q11 How confident do you feel... a) using a text processor, b) creating a presentation c) using e-mail, d) downloading and installing software. Threshold: Average of 2.5 or more on a 1-4 confidence scale

Motivation: Q14 (8); disagree to "Using computers in class does not result in significant learning benefits".

For full question wordings refer to questionnaire.

5 http://forum.europa.eu.int/Public/irc/dsis/edtcs/library?l=/public/unesco_collection/programmes_isced97&vm=detailed&sb=Title

6 Densely populated area refers to a set of closely related local units, each one of which having a density greater than 500 inhabitants per km2, and the total population of which being of at least 50 000 inhabitants; Intermediate area refers to a set of closely related local units that do not pertain to a densely populated area, each one of which having density greater than 100 inhabitants per km2, and where the total population is at least of 50 000 inhabitants or it refers to a set that is adjacent to a highly populated area. Thinly populated area (rural): refers to a set of closely related local units that are not part of a densely populated area, or of an intermediate area. (A set of local areas totalling less than 100 km², not reaching the required density, but entirely enclosed within a densely-populated or intermediate area, is to be considered to form part of that area. If it is enclosed within a densely-populated area and an intermediate area it is considered to form part of the intermediate area).

7 Source: http://www.uis.unesco.org/profiles/selectCountry_en.aspx (visited 28 March 2006)

8 Source: http://www.eurydice.org/Documents/struct2/frameset_EN.html (visited: 28 March 2006)

9 Source: http://europa.eu.int/comm/education/policies/2010/nationalreport_en.html (visited: 9 May 2006)